Decommissioning Seminar Offshore Norge

Miljøfyrtårn®
SERTIFISERT VIRKSOMHET

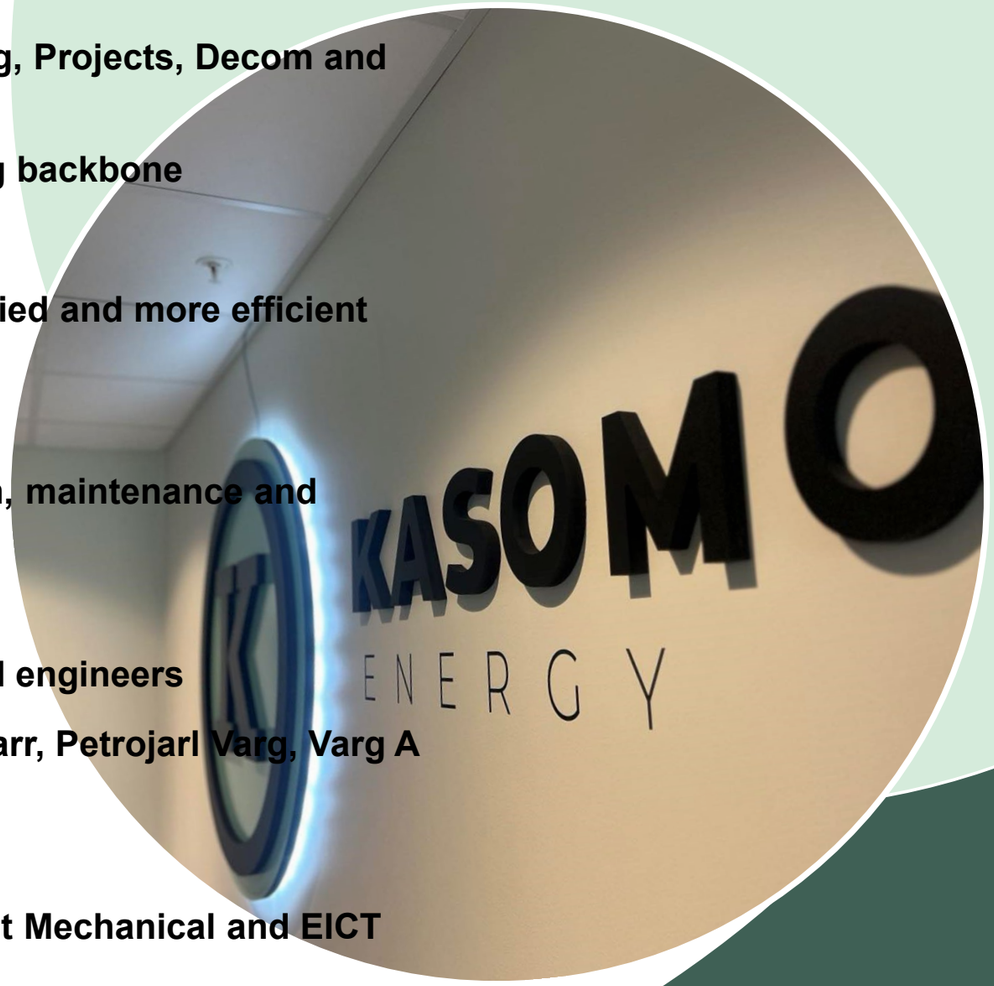
KASOMO ENERGY

"From idea to full integration"

Stavanger, 12th November

Who are we?

- Company started in Trondheim, May 2022.
- 30 years' experience from Oil and Gas. Operations and Engineering, Projects, Decom and Modifications.
- We see things from an operational perspective with an engineering backbone



- Our Core: “Executing projects from idea to full integration: Simplified and more efficient with the same level of quality and safety”
- Securing ownership though all project phases
  - Extensive experience in managing and executing modification, maintenance and decom projects
  - Innovative Team
  - Integrating students/trainees from NTNU with our experienced engineers
  - Decommissioning Project Management on FPSO Petrojarl Knarr, Petrojarl Varg, Varg A wellhead. Involvement in multiple other decom projects
  - Expertice in Waste Management
  - Engineering Team: Process, Process Safety, Risk Management Mechanical and EICT
  - Inhouse Document control/CAD/LCI teams
  - Inhouse 3D Scanning and 3D Modelling team
  - Offshore Execution Team including all main disciplines

Decommissioning Risks

What can we do to secure Schedule and Cost?

- Preparations
- Procedures
- Risk Mapping and identification
- Effective Coordination
- Clear Communication
- Strong Teamwork
- Reuse Planning and Engineering
- Win-Win focus

Decommissioning Risk Reduction

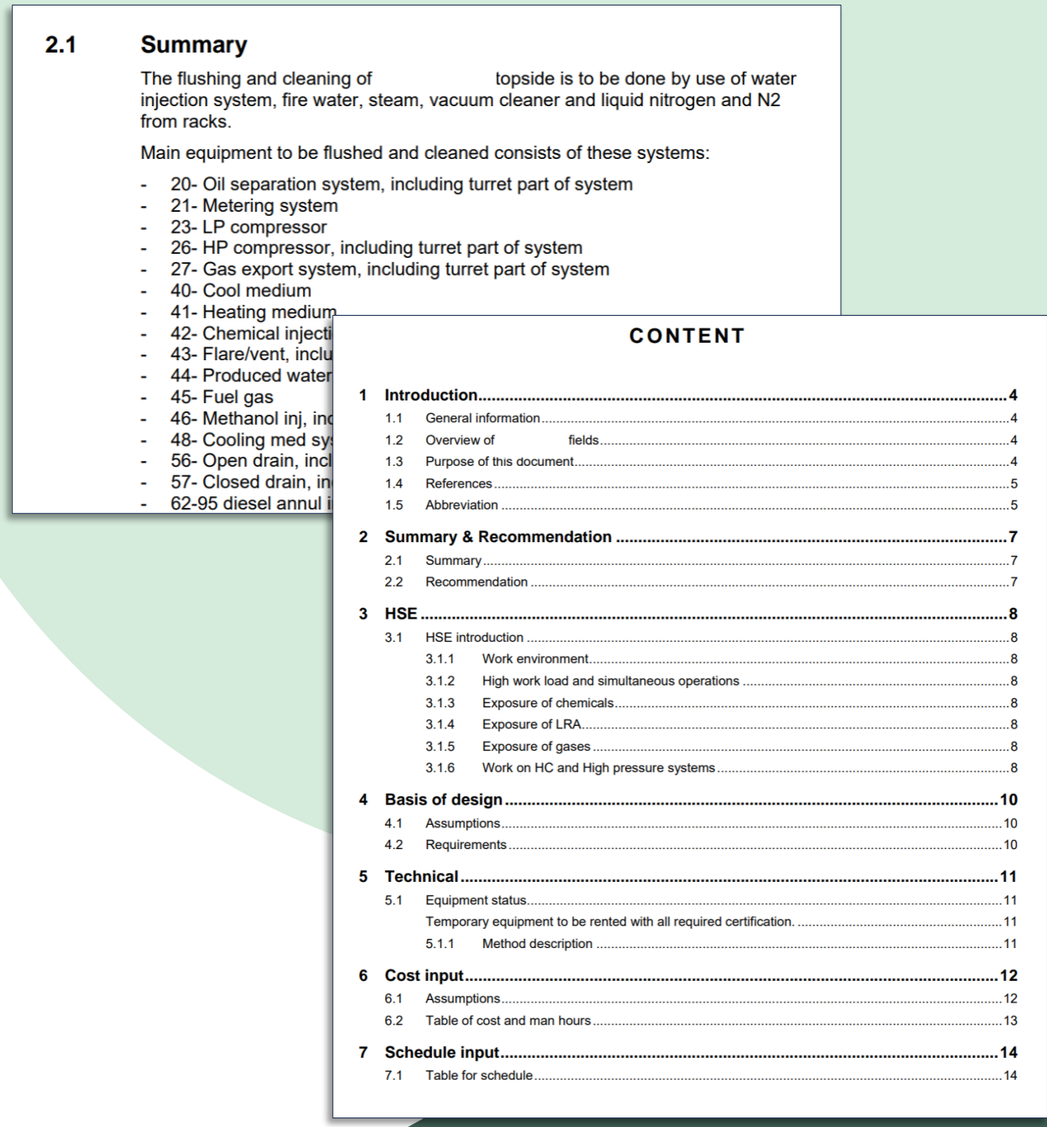
Risk Reduction:

• Early startup of planning
• Activity Coordination - Ensuring good flow in execution
• Early Vessel planning and booking
•Priority Management
• People in focus. Controlled Down manning - Maintaining motivation, ownership have direct impact on schedule
• Mapping and Identification of dangerous substances
• Engineering Down – Shutdown of systems in right sequence
• Coordination of Plug and Abandon
• Plan for temporary equipment for Unmanned As Left period
• Slop handling - Minimizing slop, using HC-capable vessels, identifying ports that can handle dangerous substances

Decommissioning Risk Reduction

Our gained decom experience:

- Early Development of Method Descriptions per system
- Inclusion of Operations in Planning - Ensuring ownership
- Early Inclusion of Suppliers in Planning
- Cleaning of Subsea Pipelines, Topside and Vessels
- Mapping and Identification - Offshore removal of dangerous substances after COP
- Handling of LRA, Mercury, Chemicals and Hydrocarbons
- Slop Handling
- Flushing, Steaming, and Manual Cleaning of Tanks and Vessels
- Securing Loose Equipment - Preparation for lifting



2.1 Summary

The flushing and cleaning of topside is to be done by use of water injection system, fire water, steam, vacuum cleaner and liquid nitrogen and N2 from racks.

Main equipment to be flushed and cleaned consists of these systems:

- 20- Oil separation system, including turret part of system
- 21- Metering system
- 23- LP compressor
- 26- HP compressor, including turret part of system
- 27- Gas export system, including turret part of system
- 40- Cool medium
- 41- Heating medium
- 42- Chemical injecti
- 43- Flare/vent, inclu
- 44- Produced water
- 45- Fuel gas
- 46- Methanol inj, inc
- 48- Cooling med sy
- 56- Open drain, incl
- 57- Closed drain, in
- 62-95 diesel annul i

CONTENT

Decommissioning Risk Reduction

Questions:

- How do we maintain and include already existing decom experience in the business?
- Thinking green involves adopting practices and making choices that are environmentally friendly and sustainable. How can we include this in decom planning?
- How can we include Reuse in decom planning?

The end goal: